

# interface...

A Cray Research, Inc. publication June/July 1987



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*Teamwork is the secret to a winning season at Cray Research. On a warm summer night, Corky Seeber, Greg Hubbard, Mark Farley, and Gordy Thorson, members of Cray's softball team in Chippewa Falls, watch a teammate's ball sail over the fence. For a further look at summer in Chippewa Falls, see page 6.*



## Conquering the corporate nemesis

Merely mentioning its name can wreak terror in the heart of the most stalwart corporate citizen. At first reference, it conjures horrible visions of broken pencils, dead calculator batteries, and endless mounds of green accounting worksheets. Dread and delay often go hand in hand with this unnerving, yet inevitable event called operations planning.

But this isn't how it works at Cray Research. Here, the operations planning process is an integral part of the Cray style of doing business. Professionalism, communication, creativity, and informality are keys to the success of this process, which in turn is one key to the company's success.

### The planning cycle

The overall process for Cray Research is broken down into a Three-Year Strategic Plan, an Annual Operations Plan, and two interim forecasts during the year. The strategic planning process is used to make assumptions on next year's production levels, system installations, and resource allocations. Although it covers a span of three years, an important bene-

fit of the Strategic Plan is that it provides a guideline for the next year's Annual Operations Plan.

### What is an operations plan?

The Operations Plan at Cray Research is a financially stated guideline. "Its intent is to ensure the most effective use of resources for accomplishment of the most important corporate objectives," explains Dave Hawkins, manager of operations planning. "The goal is not to develop a rigid statement, but rather to establish an ongoing planning process. The operations planning group works very hard to make the entire process as easy as possible. More important, we try to make the process responsive to the ever-changing needs of the company."

The operations planning process, based on assumptions agreed to in the Strategic Plan, normally begins in June. The process is not intended to be a mathematical exercise using last year's figures plus a given percent. It is a process where managers can examine their goals and objectives, determine their strategies, and calculate what

resources they need to implement these strategies.

"The philosophy at Cray Research is to include every manager in the planning process," says Dave. "It's a bottoms-up system. All managers are required to assume full responsibility for planning their own areas. Each division must then reconcile its managers' requirements with the resources allocated to that division. From the division level, a corporate plan is formulated."

"The financial controllers at each location consolidate the department managers' plans and coordinate the review process for location management. They make sure that time-tables are met, and that managers have the appropriate tools to prepare their plans," continues Dave.

After careful review and evaluation, a preliminary plan is proposed for each location by its general manager or vice president. Then in August, when the division budgets have been prepared, the operations planning group consolidates the plans of every region and division and prepares a company-wide plan

**1988  
OPERATIONS  
PLANNING  
CALENDAR**  
(June-Nov., 1987)

**JUNE 1**

1987 Strategic Plan complete.  
Production levels set for 1988.  
Planning manuals and accounting assumptions distributed.

**JUNE 26**

Initial installation assumptions prepared by Operations Committee for all business units.

**AUGUST 12**

First draft of individual business unit plan due to operations planning.

**SEPTEMBER 4**

Operations Committee review of first draft of Consolidated Operations Plan.

**SEPTEMBER 16**

Executive Committee review of first draft of Consolidated Operations Plan.



for review by senior management. In September, this plan is passed to the Operations and Executive Committees for review.\* After the necessary adjustments are made by each location, the two committees review the plan again in October. Finally in November, the Operations Plan for Cray Research, Inc. and Subsidiaries is presented to the Board of Directors for final approval.

### Ongoing flexibility

As stated earlier, the Operations Plan at Cray Research is only a guideline. The plan that is approved by the Board of Directors in November is merely a starting point — it establishes a desired direction. To maintain accurate financial projections, managers perform interim forecasts twice a year. "These forecasts are the vehicles managers use to explain changes and deviations from their original plan," says Dave. "They are prepared twice a year by every manager in the company — the first time using actual data through March 31, with a forecast for April through December; and the second using actual data through August 31, with a forecast for September

through December." These forecasts help the operations planning group determine changing conditions in the company and identify any modifications that might be necessary.

### Why does Cray Research need a plan?

The Operations Plan is necessary for three reasons. It allows the company to effectively allocate and use resources; it helps people make solid strategic decisions and evaluate the financial outcome of those decisions; and it helps the company establish a habit of planning. "We operate in a changing environment," continues Dave. "Circumstances occur that require frequent modifications in our operating plan. This demands an extremely flexible planning process — one that is dynamic enough to provide timely data to satisfy the information needs of our people."

Cray Research currently is undergoing a reforecasting process based on revised installation assumptions for 1987 and 1988. To meet 1987 and 1988's financial targets, a slow-down in the growth of operating expenses is required.

"It can be a difficult process when managers are asked to adjust

their projections in accordance with slower growth expectations. I give credit to the managers at Cray Research for recognizing when a fundamental change in business has occurred and for taking swift action to adjust their courses accordingly. At Cray Research, people are quick to contribute their share of any adjustments that may be required," continues Dave.

The operations planning process begins with the individual people at Cray Research. People make up a project, many projects make up a department, and many departments make up a division. All of the parts added together equal Cray Research, Inc. The Operations Plan, which sums up the needs and determines the resources for these many parts, is an integral force behind the success of this company. Used as a guide and not a rule, this plan emulates the philosophy of the Cray Style. The perpetuation of a successful operations planning process requires continued communication, creativity, and teamwork — elements that form the foundation of Cray Research. ●

\*The Operations Committee members include all of the company's vice presidents and a few other individuals. The Executive Committee members are John Rollwagen, John Carlson, Marcelo Gumucio, Andrew Scott, Les Davis, and Seymour Cray.

**SEPTEMBER 15-  
OCTOBER 9**

Budget review of plans for regions and subsidiaries.

**SEPTEMBER 27**

Second forecast due to corporate (actuals through August).

**OCTOBER 15**

Final 1988 plans due to operations planning.

**OCTOBER 30**

Operations Committee reviews final draft of Operations Plan.

**NOVEMBER 5**

Review of final plan by Executive Committee.

**NOVEMBER 17**

Cray Research, Inc. Board review of 1988 Operations Plan.





Everybody reads Interface!

## And the results are in...

When Cray Research employed 45 people, the most practical and effective means of communication was employee meetings that everyone could attend. Fifteen years, 4,500 employees, and hundreds of locations later, this method of communication just doesn't work anymore.

Spreading the word has become a complex process. We now use numerous methods of communication, including videotapes, quarterly employee meetings, and a variety of newsletters. Perhaps the most

familiar method, however, is *Interface*. Since its inception ten years ago, *Interface*'s goal has been to provide timely and accurate information to the employees of Cray Research. Although this goal has remained the same over the years, needs have changed that make periodic re-evaluation of objectives necessary.

Recently, in another attempt to assess past and plan for future issues, a representative sample of

*Interface* recipients were asked to participate in a readership survey. 1,200 surveys were distributed, and 1,140 people responded — an exemplary 95 percent response rate!

Below are the questions asked, the possible responses, and the percentage scored on each answer. A summary of these questions follows on the next page.

### How much of Interface do you read?

Multiple response	.1%
Do not read at all	11.3%
Skim the articles	10.0%
<b>Read a few articles</b>	<b>44.5%</b>
Read most articles	29.0%
Read all articles	5.0%
No response	.2%

### I find the writing in Interface to be:

Usually NOT clear	1.1%
Sometimes clear	23.1%
<b>Usually clear</b>	<b>64.2%</b>
No response	11.6%

### I believe what I read in Interface.

Multiple response	.4%
Disagree strongly	.2%
Disagree	1.9%
<b>Agree</b>	<b>74.7%</b>
Agree strongly	9.3%
No response	13.5%

### Interface should be:

Multiple response	.7%
Less technical	20.1%
<b>The same</b>	<b>55.6%</b>
More technical	10.5%
No response	13.0%

### The primary reason I read Interface is:

Multiple response	12.5%
To kill time	3.8%
Customer product use	3.0%
Benefits	1.8%
Company's projects	18.2%
Company's products	8.1%
<b>Company's people</b>	<b>40.1%</b>
No response	12.4%

### Interface is written for:

Multiple response	1.9%
<b>Balanced</b>	<b>55.9%</b>
Technical	17.2%
Manufacturing	3.8%
Administrative	8.7%
No response	12.6%

### When finished with Interface, I:

Multiple response	1.8%
<b>Throw it away</b>	<b>37.5%</b>
Take it home to family	17.1%
Save it	29.0%
No response	14.6%



When asked their primary reason for reading *Interface*, most people responding to the survey indicate that they want to read about the company's people. The second most popular reason is to read about company projects. Most people note that *Interface* is written in a balanced way, with administrative, manufacturing, and technical groups represented. At the same time, employees find the writing to be clear and understandable, and almost all people responding to the survey believe what they read in *Interface*.

Although most people feel that the information and content should remain the same, the second choice for people in subsidiaries, Chippewa Falls, and Minneapolis is to make *Interface* less technical. In the regions and Mendota Heights, the second choice is to include more technical material.

Most people responding — almost 38 percent — throw away their copy of *Interface* after reading it. Another 29 percent save it, and only 17 percent bring *Interface* home to their families. Interestingly, the further away from the central locations, the more likely people are to save their copies of *Interface*. In Minneapolis and Mendota Heights, people tend to throw it away after reading it. In Chippewa Falls, people either throw it away or bring it home to their families. In the regions, there is an even split between people who save it and those who throw it away; and in the subsidiaries, the majority of people surveyed saves *Interface*.

Finally, 33 percent of the people surveyed submitted additional comments. The majority of suggestions regards content rather than design. In sum, the comments provide worthwhile direction for upcoming issues. They provide an idea of what readers enjoy and want to see in *Interface*.

Thanks to everyone who participated in this readership survey. As comments, suggestions, and changes are incorporated, let us know what you think. ●

## BenefitsPlus

Cray Research provides two disability plans that are designed to partially replace income lost when illness, injury, or maternity leave prevent employees from performing their jobs. The two plans available for U.S. employees are the Short-Term Income Protection plan for all regular full- and part-time employees scheduled to work 20 or more hours per week, and the Long-Term Disability plan for all regular full-time employees, scheduled to work 32 or more hours per week. Information about disability plans for employees outside the United States may be obtained from the human resources representative at your subsidiary.

### Short-Term Income Protection (STIP)

This plan covers a period of disability up to a maximum of 180 consecutive calendar days. Benefits will start on the 11th work day of disability at 75 percent of current base salary. Personal time may be used for income during the first 10 days and also as a supplement up to two hours per day, 10 hours per week to benefits received after the 10th day of disability. This brings this benefit up to 100 percent. Income received from this plan is subject to income taxes.

A physician's statement including the type and estimated length of disability must be furnished to Cray Research by the tenth day of disability. At the end of the disability, or when returning on a partial disability, the employee is required to obtain a signed statement from a doctor saying that it is permissible to begin work again.

### Long-Term Disability (LTD)

Regular full-time employees who continue to be totally disabled at

the expiration of STIP may qualify for Long-Term Disability (LTD) benefits. Your doctor must document the extent and nature of the total disability. This documentation is forwarded to the company's LTD insurance carrier for review. You then will be notified by the carrier if LTD benefits are payable.

LTD benefits provide 60 percent of base monthly earnings up to a maximum monthly benefit of \$15,000. Like the STIP plan, this benefit may be supplemented with accrued personal time.

### BenefitsPlus Q & A

**Q.** What is the stock price for the beginning of the 1987-88 plan year for the Employee Stock Purchase Investment Plan?

**A.** The closing price on June 1, 1987 was \$98.00. With the 15 percent SPIP discount, the purchase price is \$83.30.

**Q.** We will be sending our newborn daughter to a day care center soon. When may I enroll in the Dependent Care Expense Account?

**A.** You have 31 days from the birth of your child to enroll in the Dependent Care Expense Account plan. If you miss this enrollment period, the next opportunity is the annual open enrollment held each November, which is effective the following January. Deductions for day care may not begin until you actually return to work, therefore the date that you plan to return to work should be noted on the enrollment form.

Q&A





# In the good ol' summer time



*So much to do. So little time.  
Boredom in Chippewa is close to a crime.*

*Fishing and sailing to fill any quota.  
You can find what you want on big Lake Wissota.*

*Chippewa's shops have diversions galore.  
They relieve summer doldrums when rain is in store.*

*Spend the day golfing and never go wrong.  
You're not playing hooky if the boss goes along.*

*The Cook-Rutledge Mansion blends old with the new.  
Historically speaking, it's a sight one must view.*

*Of all of the parks, perhaps Irvine's the best,  
but set aside time to see all of the rest!*

*Why not play softball in your spare time?  
Join a Cray league, it won't cost you a dime.*

*Summer and beer seem to go hand in hand.  
They say Leinie's Brew is the best in the land.*

*Kids can't complain that there's no place to play,  
'cause every day's "kids' day" at the YMCA.*

*The fair is a big one, excitement is real.  
Yet Chippewa does it with small-town appeal.*

*To Chippewa Falls, Cray proposes a toast.  
Summertime's special when you are the host!*







# It's time to prove ourselves again

"We've had a wonderful 15 years at Cray Research, but now I want to put that into perspective. Those 15 years are gone — over and done. We're at an important juncture in this company — one that is challenging but also very exciting."

John Rollwagen shared these thoughts with employees, analysts, and shareholders at the Annual Shareholders' Meeting in Minneapolis on May 19. He explained his comments by taking everyone back in history to another period of transition.

## Remember the past

"It's 1981 and some special things are happening at Cray

**"We know that it's great to have done as well as we have, but we also know that we need to prove we can do it a second time."**

**— John Rollwagen**

Research. The CRAY-1 computer is the industry standard. We've reached about \$100 million in revenues and are delivering about a dozen machines," John says.

"Up until this time we've relied exclusively on the CRAY-1 product — the product of Seymour's genius — but now we're approaching our first product transition. We also are experiencing some significant new competition from Control Data Corporation's CYBER 205. It's showing signs of being able to per-

form almost as well as the CRAY-1 system.

"We know that it's great to have done as well as we have, but we also know that we need to prove we can do it a second time."

## Look to the future

Many companies come to the marketplace with a product, demonstrate its capability, but burn out because they can't do it again. Cray Research clearly did demonstrate technological excellence a second time with the transition from the CRAY-1 system to the CRAY X-MP system. But now, six years later, the company is confronting many of the same challenges that occurred in 1981. The CRAY X-MP system, the industry standard, is still very successful in the marketplace. But, as John Rollwagen emphasizes, it's time to move on and prepare for the next product transition.

"This transition is something on which we all need to focus — we have to work through this together. We're entering a challenging period of testing where we have to make sure that our next product will demonstrate the continued technical success of Cray Research."

In addition to this challenge, Cray Research is experiencing emerging competition in the marketplace. Along with CDC, there is strong competition from Fujitsu, Hitachi, and NEC. Existing benchmarks show the performance of their machines is impressive — not quite as solid as the CRAY X-MP system — but definitely in the same ballpark. As John reports, "It's time again for us to walk away from our competition." Seymour Cray thinks we should run.

Cray Research also is experiencing another parallel to 1981 with a shift in the company's marketing effort. We are concentrating on

new-name accounts, primarily because current customers are re-evaluating their strategies for the next four or five years. Should they get another CRAY X-MP system, should they wait for a future product like the CRAY Y-MP system, or should they switch to the CRAY-2/CRAY-3 family of systems? The outcome for Cray Research over the next 12 months will be more new-name installations with smaller systems at a lower price per unit.

## What does this mean for today?

As a result of this change in the installation schedule, the assumptions that underlie how we plan to

**"Instead of a few hundred customers for this kind of work, we're talking about hundreds of thousands of customers. I can hardly wait!"**

**— Seymour Cray**

allocate resources have been revised for 1987 and 1988. For further information on this situation and how the company is adjusting, refer to the article on operations planning found on page two of this issue.

## What does this mean for tomorrow?

In 1981, the world market for Cray systems was thought to be about 85 customers. Today, the sky's the limit. "I'm sure we



haven't found even a fraction of those people that potentially can use this technology," says John. Seymour emphasizes this by comparing the personal and the supercomputer businesses.

"Today, people can buy personal computers that have the memory capacity of a CRAY-1 system. In the early 1990's, Apple is planning to market a personal computer with a memory size equal to our current CRAY-2 system. This is going to be a real revolution because people are going to get educated in the kinds of things they can do with a computer in a three-dimensional simulation mode. And what will they want when they finish their work on their personal computers and want to do something more? They're going to need time on a supercomputer. What a revolution that might be — instead of a few hundred customers for this kind of work, we're talking about hundreds of thousands of customers!"

Cray Research has performed well from a business standpoint and extremely well from a technological standpoint over the last fifteen years. But people are going to have to work even harder now to hold that edge in the future. This industry moves very fast, and it moves continuously. "If we relax for even one second," explains John, "it's going to overwhelm us."

"The fact that our products represent approximately 65 percent of the marketplace is not an accident. Cray machines have become the standard of this industry. In fact, in many ways we play a leadership role and define this industry with Cray technology. We're making computers bigger and faster than ever before, and we're challenging ourselves with new applications for these machines. The marketplace is out there, but that doesn't guarantee that we get the business. The only thing that guarantees that Cray Research wins is that we continue to provide the outstanding technological performance that we have in the past." ●

# News Briefs

## German aerospace agency orders system

On May 7, Cray Research announced that the Deutsche Forschungs- und Versuchsanstalt fuer Luft- und Raumfahrt (DFVLR) has ordered a CRAY X-MP/216 supercomputer with SSD solid-state storage device. The leased system will be installed in the third quarter of 1987 and will replace a CRAY-1 S/1000 computer system in operation since 1983.

DFVLR is a government-funded research center dedicated to a wide range of aerospace, aircraft, and space research including energetics, propulsion, remote sensing, and meteorological research.

## Aerospace Corporation orders CRAY X-MP system

Cray announced on May 7 that the Aerospace Corporation, a private, non-profit engineering firm, has ordered a CRAY X-MP/14 computer system. The purchased system will be installed in the fourth quarter of 1987 at the company's computer facility in El Segundo, California.

The Aerospace Corporation, a new Cray Research customer, provides general systems engineering and integration services for military space systems, principally to the Space Division of the U.S. Air Force Systems Command.

## Consortium installs system

On May 13, Cray announced that CINECA, a consortium of 13 Italian

universities, has installed a CRAY X-MP/48 supercomputer with SSD solid-state storage device. The purchased system was installed during the second quarter of 1987 in CINECA's data processing center in Casalecchio di Reno, Bologna.

The CRAY X-MP/48 system is the second for CINECA. A CRAY X-MP/12 computer system was installed in 1985. CINECA supplies computer services to its member universities as well as to other organizations throughout Italy. CINECA's 13 members include the universities of Trento, Udine, Padova, Venezia, Ferrara, Bologna, Modena, Parma, Ancona, Siena, Firenze, Catania, and Trieste.

## French aerospace firm orders CRAY X-MP supercomputer

Cray announced June 2 that Aerospatiale, a French aerospace company, has ordered a CRAY X-MP/14se computer system. The system, valued at approximately \$3.6 million, will be the first CRAY X-MP/14se system installed at a customer site. The leased system will be installed in the fourth quarter of 1987, pending export license approval.

Aerospatiale designs and manufactures commercial aircraft such as the Caravelle, Concorde, and Airbus. The CRAY X-MP/14se computer system will be installed at Aerospatiale's facility in Toulouse, France.

## Army installs CRAY X-MP/14 system

Cray Research announced June 24 that the U.S. Army Strategic Defense Command purchased a



CRAY X-MP/14 computer system, valued at approximately \$7 million.

The system was installed in the second quarter of 1987 by Grumman Data Systems, acting as prime contractor for the U.S. Army Strategic Defense Command Simulation Center located in Huntsville, Alabama. The system will support a large base of scientists and engineers involved in research and development for promising technology for a broad range of future strategic defense applications.

### **New employment eligibility requirement**

The Immigration Reform and Control Act passed last November requires all new employees hired by U.S. companies to fill out the I-9 Employee Eligibility Verification Form. This Act prohibits all U.S. employers from knowingly hiring aliens who are not authorized to work in the United States. As a result, all Cray Research employees hired between November 7, 1986,

and May 31, 1987, need to contact their local human resources representatives to fill out an I-9 form. Please respond to this request as soon as possible. Anyone hired after May 31 will complete the form at the time of hiring.

In addition to filling out the I-9, employees also must present proof of identity and employment authorization. Only original documents will be accepted. If you have any questions please contact your local human resources representative.

### **Not to mention these facilities**

The April issue of *Interface* noted the efforts of facilities people in Mendota Heights and Chippewa Falls. However, it failed to mention the company's facilities people who work in our leased properties. This is a significant group; three of the four buildings in Mendota Heights are leased, as are the Minneapolis offices, the distribution center/warehouse, and most of our region and subsidiary offices.

The facilities people in these locations make important contributions to Cray Research; they coordinate construction, provide day-to-day maintenance, move furniture, maintain inventory, coordinate phone and data lines, oversee the company's security, and much more. There are too many people to mention and too many to forget. So for those who weren't mentioned in the April issue — hats off to you, and thanks.

### **Examples of documents establishing identity include:**

- Driver's license
- State-issued identification card
- Voter's registration card

### **Examples of documents establishing employment authorization include:**

- Social Security card valid for employment purposes
- United States birth certificate
- Certificate of Birth Abroad issued by the Department of State

### **Examples showing both identity and employment authorization include:**

- U.S. passport
- Certificate of Naturalization
- Alien Registration Receipt Card

### **User news**

The next time you see computer-generated graphics on a television commercial or the latest music video, pay close attention. Those computerized graphics may have been produced on a Cray system. Recognizing the success of these graphics, Cray Research decided to produce some graphics of its own for company video tapes. These graphics were designed and rendered by Minneapolis' Lamb and Co. on the CRAY-2 computer system



at the University of Minnesota Supercomputer Center.

"We asked Lamb and Co. because they are a new and innovative firm, and they use a CRAY-2 system to generate some of their graphics," says Anne Hazelroth McNeill, associate marketing analyst. "Using a CRAY-2 system is fairly unusual."

Fifteen seconds of Cray-generated graphics were produced. "It doesn't seem like much, but in terms of computer graphics, it's a lot," Anne remarks. "It's done in high-contrast color and would provide a strong opening to any video production."

The graphics already have been used at the beginning of the 15-year anniversary, the latest employee meetings, and the recent product announcement videotapes.

If you are interested in using the new graphics for an internal production, contact Anne in Minneapolis at extension 6424.

### Six ways to ruin a committee

- Pick a poor leader who never compliments or motivates.
- Put one person who will dominate the group on the committee. For some great arguments, put two such people on the committee.
- Make sure no one knows the committee's task.
- Insist on circular discussions that ensure no action.
- Shun agendas and handouts that might reveal the committee's objectives.
- Prepare a hidden agenda so you and one or two others can talk about it while the rest of the committee sleeps.

### Here it is!

Hearing all kinds of talk about the latest scoop in *Interface* and can't find a copy to read? The readership survey conducted earlier this year reported that some people have trouble find-

ing recent issues of *Interface*. Because the different locations vary in their distribution practices, this list will help provide a little direction. If there are any further problems, please contact Kate Neessen at extension 6445 in Minneapolis.

### Interface Distribution List

#### Chippewa Falls and Rice Lake

Development:	Delivered by secretaries to each person. Extra copies in the cafeteria.
Engineering:	Delivered by secretaries to each person. Extra copies in the cafeteria.
Harry Runkel:	Available at the mail stations.
Manufacturing:	Delivered by secretaries to each person. Extra copies in the cafeteria.
Printed Circuit:	Available in the cafeteria.
Product Support:	Available at the mail stations.
Prod. Machine Shop:	Available in the cafeteria.
Rice Lake Modules:	Delivered to each supervisor. Extra copies in the cafeteria.
Riverside Project:	Available in the cafeteria.
Riverside Dev.:	Available at the reception desk.
Site Engineering:	Available in the cafeteria.
Systems:	Available at the mail stations.
Technical Ops.:	Available at the reception desk.

#### Mendota Heights

Software Training:	Delivered by secretaries to each person. Extra copies in the library and cafeteria.
Software/Tech. Ops.:	Delivered by secretaries to each person.
Marketing:	Delivered by secretaries to each person.
Software Dev.:	Delivered by secretaries to each person.

#### Corporate Offices

Northstar East:	Delivered by secretaries to each person.
Northstar West:	Delivered by secretaries to each person.

#### Regions / Subsidiaries

Copies are mailed to the main subsidiary office and forwarded to people at the sites.





A key information resource, Teltech is one example of Cray's continuing effort to provide employees with the best possible means for doing their jobs. Above: Joni Herren, development librarian, conducts a search on the Teltech terminal.

## Teltech an added resource

How would you like to have an entire library at your fingertips? Many people at Cray Research already do.

Through a new information source called Teltech Resource Network, Cray Research helps employees gather advice through a network of experts and countless databases in a matter of minutes.

Teltech is an information relay that connects the user with many of the databases available within the public domain. The subject matter included in these databases covers energy, marketing, law, government, patents, science, technology, vendors, and many more. Databases often used by Cray Research employees include *Business Software*, *Chemical Abstract Search*, *Copendex*, *INSPEC* and *Trade and Industry Index*.

Teltech is used by employees in Minneapolis, Mendota Heights, and Chippewa Falls with access to Teltech terminals or personal com-

puters and a phone. Teltech differs from a single database vendor in that it is a service that helps people locate a proper database and a network of technical experts. "Teltech is especially useful for providing quick access to information that an employee needs, but that we don't have," says Joni Herren, development building librarian. "By interacting with a Teltech database searcher, employees have access to a wealth of resources. They can watch the search taking place on a terminal. At the same time, they can talk to the searcher on the phone, directing him or her to the information that is most appropriate. By guiding the search, they get good results and save time."

Within the past year, more than 37 searches have been performed in various departments throughout Chippewa Falls, and use is increasing as more people discover the resource.

"It only takes a minute to learn how to operate the Teltech termi-

nal," comments Brad Smith, a mechanical engineer in Chippewa Falls. "Our group used the system right after it was installed to meet a challenge. We were trying to find a thermoplastic material suitable for the manufacturing of some of our connectors. With the help of Teltech, we found a university professor with over 13 years of experience in thermoplastics who was able to help us determine the best material to use."

Teltech is a key resource that provides people with increased information and a network of valuable sources to help solve problems and meet challenges. It is one example of the company's continuing effort to provide employees with the best possible means for doing their jobs. Although an annual fee is required for leasing a terminal, another alternative is to purchase software and dial-up capabilities for Apple Macintosh or IBM personal computers.

People who are interested in gaining access to Teltech's network of databases and technical professionals can contact Ron Bennett, vice president of Teltech Resource Network at (612) 829-9000, or (800) 833-8330.

## .....interface.....

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